REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. **Interview of December 15, 2008**

The applicants are appreciative of the opportunity to discuss the pending application with the examiner and his supervisor on December 15, 2008. During the interview, proposed amendments to claims 1, 4, 7, 10, and 13 were presented and discussed in view of U.S. publication no. 2004/0046024 (*Natsukari et al.*).

The examiner agreed that the proposed amendment overcomes the prior art of record and that consideration will be given the amendment upon receipt of an accompanying response.

2. **In the drawings**

Figures 28(A) and 28(B) are presently amended in the REPLACEMENT SHEET of page 25 of the drawings. Specifically, the label "PRIOR ART" is added to identify Figures 28(A) and 28(B). It is respectfully submitted that no new subject matter is introduced.

Acceptance of the REPLACEMENT SHEET is respectfully requested in the next Office communication.

3. **In the claims**

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended in accordance with the proposed amendment discussed during the interview dated December 15, 2008 to more clearly point out the subject matter for which protection is sought.

Claims 1, 4, 7, 10, and 13 are all amended to recite that a specified, set, or acquired code size is fixed for a 2-dimensional code regardless of an amount of storage information to be written in the 2-dimensional code. It is respectfully submitted that no new matter is added, since support for the amendments may be

found, for example, at least on page 3, lines 19-23, page 4, lines 15-31, page 4, line 32 through page 5, line 2, and page 16, line 31 through page 17, line 1 of the specification as originally filed.

Claims 2, 3, 5, 6, 8, 9, 11, and 12 are left unchanged.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

4. Rejection of claims 1-3, and 7-12 under 35 U.S.C. § 102(e) as being anticipated by U.S. publication no. 2004/0046024 (*Natsukari et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claims 1, 7, and 10, on the basis that the *Natsukari* publication fails to disclose each and every recited element of amended claims 1, 7, and 10. The remaining claims depend from either claim 1, 7, or 10, and are therefore patentable as containing all of the recited elements of claims 1, 7, or 10, as well as for their respective recited features.

By way of review, the embodiments of amended claims 1, 7, and 10 refer to a 2-dimensional code formation method and a 2-dimensional code formation device. In particular, amended claim 1 includes the step of specifying a fixed code size for a 2-dimensional code regardless of an amount of storage information to be written in the 2-dimensional code, the step of specifying storage information to be written in the 2-dimensional code, the step of calculating cell size for a unit cell of the 2-dimensional code providing storage of the storage information, the step of creating laser marking information for forming the 2-dimensional code, based on said storage information, and the step of laser marking said 2-dimensional code based on said laser-marking information.

Similarly, the embodiment of amended claim 7 requires an information-acquisition means for acquiring the code size of a 2-dimensional code and storage information that is to be written in the 2-dimensional code, a calculation means for calculating cell size of a unit cell, based upon the acquired code size and the acquired

storage information, in order to provide storage of the storage information in the 2-dimensional code, and further creating laser-marking information for forming said 2-dimensional code having the acquired code size, based at least upon said storage information, and a laser marking means for laser marking the 2-dimensional code based on said laser-marking information, wherein the acquired code size is fixed regardless of an amount of storage information to be written in the 2-dimensional code.

The embodiment of amended claim 10 similarly requires an information-acquisition means for acquiring the code size of a 2-dimensional code, number of unit cells of a 2-dimensional code, and storage information that is to be written into the 2-dimensional code, a calculation means for calculating cell size based upon code size and number of cells, and a process of creating laser-marking information for forming said 2-dimensional code having said acquired code size, based on said code size, said storage information, said cell size, and said dot step size or number of dots, and a laser-marking means for performing laser marking of the 2-dimensional code based on said laser-marking information, wherein the acquired code size is fixed regardless of an amount of storage information to be written in the 2-dimensional code.

Accordingly, in each of the embodiments of claims 1, 7, and 10, a 2-dimensional code having a fixed predetermined code size, regardless of an amount of storage information to be written therein, is formed by calculating a cell size based upon the fixed code size and the amount of storage information or number of cells. Thus, it is possible to form a 2-dimensional code having a desired code size regardless of the amount of information to be stored, and thus, it is possible to attach the desired information as a 2-dimensional code in a very small area.

In other words, once an appropriate code size is selected, and the code size fixed, the code size does not increase with an increase in the amount of information to be stored. Instead, in each of the embodiments of claims 1, 7, and 10, the cell size of the unit cell is calculated to accommodate the amount of storage information within the fixed code size.

In contrast to each of the above embodiments recited in amended claims 1, 7, and 10, the *Natsukari* publication fails to disclose at least specifying or acquiring a fixed code size, regardless of an amount of storage information to be written therein, specifying or acquiring storage information to be stored in the fixed 2-dimensional code, calculating cell size of a unit cell, based at least upon the specified or acquired fixed 2-dimensional code and the storage information, or creating laser marking information for forming the 2-dimensional code, based on the code size and the storage information, and laser marking the 2-dimensional code based on said laser-marking information.

Further, the *Natsukari* publication discloses that the theoretical symbol size (or code size) changes as the volume of information changes, in contrast to amended claims 1, 7, and 10, in which once the fixed code size has been set, the code size does not increase with an increase in the amount of storage information to be written therein. Thus, as discussed below, in the disclosure of the *Natsukari* publication codes that cannot be created in a defined space are encountered.

The *Natsukari* publication discloses a 2-dimensional code reader setting method, a 2-dimensional code reader, and a 2-dimensional code reader setting program (title; paragraphs [0002] and [0009]). The main objects of the code reader setting program described in the *Natsukari* publication are to allow a user to input specification details of a theoretical 2-dimensional code, for which the code reader setting program will calculate whether such specification details of a theoretical 2-dimensional code is possible, in order to further calculate an attachment specification for the code reader (paragraphs [0010]-[0021], [0025], [0027], [0085], [0140]-[0164], and in particular paragraphs [0102]-[0104], [0108], [0113]). In certain instances, the code specifications would not allow the creation of a 2-dimensional code in a given space, in a given manner, for a given volume of information (paragraphs [0102]-[0104], [0108], [0113]).

In particular, the *Natsukari* publication discloses that when the number of dots to be allocated to one cell is increased, the size of the 2-dimensional code symbol is

also increased. This is in contrast to the embodiments of amended claims 1, 7, and 10, which require the fixed code size to remain the same, regardless of the amount of information to be written therein, which in turn makes it possible to attach desired information as a 2-dimensional code in a very small area.

Additionally, since the 2-dimensional code size of the *Natsukari* publication increases with an increase in the amount of storage information, the *Natsukari* publication fails to disclose calculating the cell size of a unit cell, based at least upon the specified or acquired fixed 2-dimensional code and the storage information. In other words, since the *Natsukari* publication fails to disclose a fixed code size, it follows that the *Natsukari* publication fails to disclose calculating the cell size of a unit cell, based at least upon the specified or acquired fixed 2-dimensional code.

Further, while the printing of 2-dimensional codes is discussed in general in the *Natsukari* publication in relation to a theoretical 2-dimensional code (which may or may not be possible to create) having certain characteristics such as a code size, a cell size, a printable space, data type, and data volume, there is no discussion in the *Natsukari* publication of setting or acquiring actual storage information to be stored in a 2-dimensional code.

Furthermore, the entire thrust of the program described in the *Natsukari* publication is towards calculating an attachment specification for a code reader. There is no disclosure in the *Natsukari* publication of actually laser marking a 2-dimensional code, let alone creating laser-marking information and laser-marking a 2-dimensional code based upon the laser-marking information. Instead, as discussed above, code specifications are calculated or input for theoretical or possible 2-dimensional codes that could be created using printers having certain DPI ranges and defined printable areas (paragraph [0103]). While there is an option to describe the possible printing patterns, which printing patterns may be achieved through laser marking or direct marking (paragraph [0098]), there is no discussion of providing or acquiring information to actually be stored in a 2-dimensional code, and further, no

discussion of utilizing the code specifications to create laser-marking information in order to actually laser-mark a 2-dimensional code.

Since there is no discussion of providing or acquiring information to actually be stored in a 2-dimensional code, and further no discussion of utilizing the code specifications to actually laser-mark a 2-dimensional code, it further follows that the *Natsukari* publication fails to disclose creating laser-marking information based upon storage information, and further laser marking a 2-dimensional code based upon the laser-marking information, as is required by all of amended claims 1, 7, and 10.

Accordingly, *Natsukari* publication fails to disclose at least specifying or acquiring a fixed code size, regardless of an amount of storage information to be written therein, specifying or acquiring storage information to be stored in the fixed 2-dimensional code, calculating cell size of a unit cell, based at least upon the specified or acquired fixed 2-dimensional code and the storage information, or creating laser marking information for forming the 2-dimensional code, based on the code size and the storage information, and laser marking the 2-dimensional code based on said laser-marking information, as is required by amended claims 1, 7, and 10.

Thus, since the *Natsukari* publication fails to disclose every step or feature of amended claims 1, 7, and 10, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claims 1, 7, and 10 are patentable and therefore, claims 2, 3, 8, 9, 11, and 12 which respectively depend from claims 1, 7, and 10, are also considered to be patentable as containing all of the elements of respective claims 1, 7, and 10, as well as for their respective recited features.

5.   Rejection of claims 4, 6, and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. 2004/0046024 (*Natsukari et al.*) in view of U.S. publication no. 2004/0094729 (*Struye et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to claims 4

and 13, since the proposed combination of the *Natsukari* and *Struye* publications fails to disclose each and every recited step or element of amended claims 4 and 13. The remaining claim 6 depends from claim 4, and is therefore patentable as containing all of the recited steps claim 4, as well as for its respective recited steps.

By way of review, the embodiments of amended claims 4 and 13 require acquiring manufacturing history of a part or a plurality of parts, converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a fixed size, regardless of an amount of storage information to be written therein, set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

The deficiencies of the *Natsukari* publication are discussed above in detail. By way of reiteration, the *Natsukari* publication fails to disclose laser marking a 2-dimensional code onto a part. Further, as discussed above in relation to storage information, the *Natsukari* publication fails to disclose acquiring manufacturing-history information for a part. Since the *Natsukari* publication fails to disclose acquiring such information, the *Natsukari* publication also fails to disclose converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a fixed size, regardless of an amount of storage information to be written therein, set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

While the *Struye* publication does disclose marking an item with manufacturing time (paragraph [0080]) there is simply no disclosure in the *Struye* publication of converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional

code having a fixed size, regardless of an amount of storage information to be written therein, set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

Thus, neither the *Natsukari* publication nor the *Struye* publication disclose converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a fixed size, regardless of an amount of storage information to be written therein, set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts, as is required by amended claims 4 and 13.

Accordingly, the proposed combination of the *Natsukari* and *Struye* publications fails to disclose converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a fixed size, regardless of an amount of storage information to be written therein, set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts, as is required by amended claims 4 and 13.

Thus, since the proposed combination of the *Natsukari* and *Struye* publications fails to disclose every step or feature of amended claims 4 and 13, a *prima facie* case of obviousness cannot be maintained with respect to amended claims 4 and 13, and withdrawal of this rejection is respectfully requested.

Further, since the *Natsukari* publication is directed solely to a 2-dimensional code reader and a 2-dimensional code reader program, a skilled artisan would not have thought to combine the teachings of marking an item, as described in the *Struye* publication, with the reader of the *Natsukari* publication. Accordingly, a *prima facie* case of obviousness cannot be maintained with respect to amended claims 4 and 13, and withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 4 is patentable and therefore, claim 6, which depends from claim 4, is also considered to be patentable as containing all of the steps of claim 4, as well as for its respective recited steps.

6.   Rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. 2004/0046024 (*Natsukari et al.*) in view of U.S. publication no. 2004/0094729 (*Struye et al.*) and in view of U.S. publication no. 2003/0224256 (*Endo et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claim 4, from which claim 5 depends, and the shortcomings of the proposed combination of the *Natsukari* and *Struye* publications discussed above, on the basis that the *Endo* publication fails to provide for the shortcomings of the proposed combination of the *Natsukari* and *Struye* publications.

The *Endo* publication merely describes a continuous irradiation position of a laser beam (paragraph [0094]), and does not cure the deficiencies of the proposed combination of the *Natsukari* and *Struye* publications discussed above.

Accordingly, withdrawal of this rejection is respectfully requested.

7.   Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,

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